

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-3 (Cancelled).

Claim 4. (Previously Presented) An electronic article surveillance antenna for generating an electromagnetic field to interrogate and detect electronic surveillance markers, comprising:

a core formed by a plurality of amorphous alloy ribbons insulated from each other and stacked to form a substantially elongated solid rectangular shape; and

a coil winding of wire disposed around at least a portion of said core, said coil winding of wire insulated from said core, said core and said coil winding being of a minimum size for generation of an electromagnetic field for interrogation and detection of electronic article surveillance markers; wherein said core includes a central member about 50 centimeters long and about 2 centimeters wide comprised of about 25 amorphous alloy ribbons, each amorphous alloy ribbon about 23 microns thick stacked and laminated together forming said central core member, and a first outer member and a second outer member disposed on opposite sides of said central member, each of said first outer member and said second outer member about 30 centimeters long and 2 centimeters wide comprised of about 15 amorphous alloy ribbons, each amorphous alloy ribbon about 23 microns thick stacked and laminated together forming said first outer layer and said second outer layer, respectively, said central core member and said first and said second outer members together form said core.

Claims 5-11 (Cancelled).

Claim 12. (Previously Presented) An electronic article surveillance system for generating an electromagnetic field to interrogate and detect electronic surveillance markers, comprising:

a core including a plurality of amorphous alloy ribbons insulated from each other and stacked to form an elongate solid rectangular shape; and

a coil winding of wire disposed around at least a portion of said core, said coil winding of wire insulated from said core, said core and said coil winding being configured for generating an electromagnetic field for interrogation and detection of electronic article surveillance markers, wherein said core comprises a central member disposed between a first outer member and a second outer member, wherein at least a portion of said central member extends beyond an end portion of one of said first and second outer members.

Claim 13. (Previously Presented) The system of claim 12, wherein said first outer member has a first length, said second outer member has a second length, said first length substantially equal to said second length.

Claim 14. (Previously Presented) The system of claim 13, wherein said central member has a third length, said third length greater than said first length and said second length.

Claim 15. (Previously Presented) The system of claim 14, wherein said first length and said second length are about 30 centimeters and said third length is about 50 centimeters.

Claim 16. (Previously Presented) An antenna for use in an electronic article surveillance system, said antenna comprising:

a core comprising a central member disposed between a first outer member and a second outer member, wherein at least a portion of said central member extends beyond an end portion of one of said first and second outer members; and

a coil winding disposed around at least a portion of said core.

Claim 17. (Previously Presented) The antenna of claim 16, wherein said first outer member has a first length, said second outer member has a second length, said first length substantially equal to said second length.

Claim 18. (Previously Presented) The antenna of claim 17, wherein said central member has a third length, said third length greater than said first length and said second length.

Claim 19. (Previously Presented) The antenna of claim 18, wherein said first length and said second length are about 30 centimeters and said third length is about 50 centimeters.

Claim 20. (Previously Presented) A method of detecting an electronic article surveillance (EAS) marker, said method comprising:

providing a core antenna comprising a core and at least one coil winding disposed about said core, said core comprising a plurality of amorphous alloy ribbons insulated from each other, exciting said core antenna to provide an electromagnetic field in an interrogation zone of an associated electronic article surveillance system; and detecting an electronic article surveillance marker in said interrogation zone.

Claim 21. (Previously Presented) The method of claim 20, wherein said plurality of amorphous alloy ribbons are stacked to form an elongate solid rectangular laminated core assembly.

Claim 22. (Previously Presented) The method of claim 20, wherein said core of said core antenna comprises a central member disposed between a first outer member and a second outer member, wherein at least a portion of said central member extends beyond an end portion of one of said first or second outer members.

Claim 23. (New) An electronic article surveillance antenna for generating an electromagnetic field to interrogate and detect electronic surveillance markers, comprising:

a core formed by a plurality of amorphous alloy ribbons insulated from each other and stacked to form an elongate solid rectangular shape having first and second ends; and

a coil winding of wire disposed around at least a portion of said core, said coil winding of wire insulated from said core, said core and said coil winding being of at least a minimum size for operably generating of an electromagnetic field for interrogation and detection of electronic article surveillance markers.

Claim 24. (New) The antenna of claim 23, wherein said core is about 75 centimeters long and about 2 centimeters wide comprised of about 60 amorphous alloy ribbons, each amorphous alloy ribbon about 23 microns thick stacked and laminated together forming said core.

Claim 25. (New) The antenna of claim 23, wherein said coil winding of wire is 24-gauge wire with about 90 turns around said core.

Claim 26. (New) The antenna of claim 23, further including an electronic controller connected to said coil of wire, said electronic controller comprising:

transmitter means for generating an electromagnetic field for transmission into an interrogation zone for reception by an electronic article surveillance marker, the electronic article surveillance marker responding with a characteristic response signal;

receiver means for detecting the characteristic response signal from the electronic article surveillance marker; and,

switching means for switching said coil winding of wire between said transmitter means and said receiver means.

Claim 27. (New) The antenna of claim 26, wherein said electronic controller operates in a pulsed mode, wherein said switching means sequentially switches between said transmitter means and said receiver means in preselected time periods.

Claim 28. (New) A system for generating an electromagnetic field to interrogate and detect electronic article surveillance markers, comprising:

a plurality of electronic article surveillance antennas, each of said plurality of antennas including:

a core formed by a plurality of amorphous alloy ribbons insulated from each other and stacked to form an elongate solid rectangular shape having first and second ends; and

a coil winding of wire disposed around at least a portion of said core, said coil winding of wire insulated from said core, said core and said coil winding being of at least a minimum size for operably generating an electromagnetic field for interrogation and detection of electronic article surveillance markers; and,

at least one electronic controller connected to said plurality of antennas, said electronic controller including:

transmitter means for generating an electromagnetic field for transmission into an interrogation zone for reception by an electronic article surveillance marker, the electronic article surveillance marker responding with a characteristic response signal;

receiver means for detecting the characteristic response signal from the electronic article surveillance marker.

Claim 29. (New) The system of claim 28, wherein a first of said plurality of electronic article surveillance antennas is selected by said electronic controller to operate in a transmit only mode and a second of said plurality of electronic surveillance antennas is selected by said electronic controller to operate in a receive only mode.

Claim 30. (New) The system of claim 28, wherein said electronic controller operates in a non-pulsed mode.

Claim 31. (New) A system for generating an electromagnetic field to interrogate and detect electronic article surveillance markers, comprising:

a plurality of electronic article surveillance antenna, each of said plurality of antennas including:

a core formed by a plurality of amorphous alloy ribbons insulated from each other and stacked to form an elongate solid rectangular shape having first and second ends; and

a coil winding of wire disposed around at least a portion of said core, said coil winding of wire insulated from said core, said core and said coil winding being of at least a minimum size for operably generating an electromagnetic field for interrogation and detection of electronic article surveillance markers; and,

at least one electronic controller connected to said plurality of antennas, said electronic controller including:

transmitter means for generating an electromagnetic field for transmission into an interrogation zone for reception by an electronic article surveillance marker, the electronic article surveillance marker responding with a characteristic response signal;

receiver means for detecting the characteristic response signal from the electronic article surveillance marker; and,

switching means for switching said coil winding of wire between said transmitter means and said receiver means.

Claim 32. (New) The antenna of claim 31, wherein a Q value of said antenna is less than or equal to about 20 at an EAS operating frequency.
